

$\frac{\quad}{5}$	$+$	$\frac{\quad}{5}$	$+$	$\frac{\quad}{10}$	$=$	$\frac{\quad}{20}$
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Electricity Problems and Activities

Station 1: Overhead projector:

1. Find the light bulb and record the volts _____ and watts _____
2. If you ran the overhead all day in school (400 min), how much money would it cost? (≈\$0.20)

3. In order for the image to be **projected**, it must be a real / virtual image which means the lens must be some type of a converging / diverging lens.
4. Real images when projected are inverted. How do you think the image becomes upright?

Station 2: EGGSPERT QUIZ STATION **Be careful with this! Do not slam your hand on the eggs!**

Pick one person in your group to be the **quiz show host** to read the 10 questions. The rest of your group members compete to answer electricity questions! Whoever answers the most correctly wins a small prize as does the host!

Set up: Each choose a colored EGG. Game show host using white EGG to reset after each question. Leave the setting on tone and the timer set at 5. (This means you have 5 seconds to answer once you hit your EGG.)

2a) The host asks the first question. Push your colored EGG if you know the correct answer. Then write the correct answers in the blanks below. Keep track of how many you get right first!

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |



2b) How many questions did you get right? ____/10 Who won? _____*get your prize

EASTVIEW'S ELECTRIC BILL GUESSING

How much do you think Eastview High School spends in **an average month** on electricity? Take an educated guess based on your electric bill and write your answer in the blank below.

The closest without going over wins \$5, so think carefully!

Write your guess here: \$_____

ELECTRICITY REVIEW:

Know the information for the following variables for the **Quiz on Friday**:

Variable	What it stands for	Unit
I		
R		
ΔV		
P		
W		

1. Convert 350 watts to kW.

2. What does it mean if you have a K_h value of 7.2 on your electric meter?

5Name _____ Hour _____

$\frac{\quad}{5}$	+	$\frac{\quad}{5}$	+	$\frac{\quad}{10}$	=	$\frac{\quad}{20}$
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2. The LCD projector bulbs are 250 watts. If Mrs. B forgets to turn off the projector after a notes session, and it runs an extra 30 minutes, how much money will she have wasted? (\$.013 or 1.3 cents)

3. A coffee pot uses 1.7 A of current. Find its resistance. (70.6 Ω)

4. Calculate the resistance of a blender if it has a power of 700 W. (20.6 Ω)

5. How much does it cost to run a 14-W fluorescent bulb for 100 hours? (\approx \$0.14 or 14 cents)

6. You find that your electric meter has a K_h of 3.6 W h. **(THIS IS THE WORK DONE)** If it takes 2.1 seconds for electric meter to spin around once, calculate how much power your house is using. (6,170 W)

7. How much would it cost if your house was using all that power from #6, for 24 hours a day, for 1 week? (\approx \$104.69)

8. Know how to convert between Joules and kilowatt hours. (1 J = 1 watt·sec)
 - a. If your household electrical appliances do 3,321,540,000 Joules of work in one month, how many kilowatt-hours is this? (922.65 kWh) (conversion)

 - b. How much would your electric bill be? (\approx \$93.19) _____

9. What is the opposition to the movement of electrons called? _____
10. What is made up of moving electrons? _____
11. What are the **UNITS** of current: _____ voltage: _____ resistance: _____ power: _____ work: _____ or _____ (power company)
12. What is the **VARIABLE** for current: _____ voltage: _____ resistance: _____ power: _____ work: _____
13. If W is a **unit** it stands for _____, if it is a **variable** it stands for _____
14. What unit is the same as a Joule? (think of the power equation) _____
15. The rate at which energy is drawn from a source of electricity is known as: _____
16. How many Watts are in a kilowatt? _____